



**CUSTOMER NUMBER 25268**

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT LISTING SHEET**

**Information Cited By Applicant(s) That May Be Material To  
The Prosecution Of The Subject Application**

Applicants: Yager et al. Attorney Docket No. UNIV0238  
Serial No.: 10/788,884 Group Art Unit: 2858  
Filed: February 27, 2004 Examiner:  
Title: MICROFLUIDIC DEVICES FOR TRANSVERSE ELECTROPHORESIS AND  
ISOELECTRIC FOCUSING

**U.S. PATENT DOCUMENTS**

*NONE CITED*

**FOREIGN PATENT DOCUMENTS**

*Examiner Initial	ID	Document No.	Publication Date	Country	Class	Sub- Class	Translation?
/SV/	F1**	WO99/19717	4/22/99	PCT	G01N27/26		
/SV/	F2**	WO94/11728	5/26/94	PCT	G01N		
/SV/	F3**	WO95/17950	7/6/95	PCT	B01D		

**OTHER INFORMATION**

*Examiner Initial	Document No.	Document Information
/SV/	O1	Kane et al., (1999), "Blood group typing by electrophoresis based on isoelectric focusing." Anal. Chim. Acta 383: 187-168.
/SV/	O2	Kopp et al., (May 1998), "Chemical Amplification: Continuous-Flow PCR on a Chip," Science 280: 1046-48.
/SV/	O3	Levin, S., (1990), "Field -Flow Fractionation (FFF) and Related Techniques for the Separation of Particles, Colloids and Macromolecules," Isr. J. Chem. 30: 257-262.

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<u>*Examiner Initial</u>	<u>Document No.</u>	<u>Document Information</u>
<u>/SV/</u>	O4	Levin, et al., (1989), "Continuous Separation of Proteins in Electrical Split-Flow Thin (Splitt) Cell with Equilibrium Operation," Sep. Sci. Tech. 24(14) 1245-59.
<u>/SV/</u>	O5	Li, P.C.H. and Harrison, D., (Apr 1997), "Transport, Manipulation, and Reaction of Biological Cells on-Chip Using Electrokinetic Effects," Anal. Chem. 69(8): 1564-1568.
<u>/SV/</u>	O6	Liu, G. and Giddings, J., (Feb 1991), "Separation of Particles in Nonaqueous Suspensions by Thermal-Electrical Field-Flow Fractionation," Anal. Chem. 63(3): 296-99.
<u>/SV/</u>	O7	Mao, Q.L. and Pawliszyn, J., (1999), "Demonstration of isoelectric focusing on an etched quartz chip with UV absorption imaging detection," Analyst. 124: 637-641.
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<u>/SV/</u>	O9	Mosher et al., (1989), "Computer Simulation and Experimental Validation of the Electrophoretic Behavior of Proteins," Anal. Chem., 61: 362-66.
<u>/SV/</u>	O10	Nguyen et al., (1977), "Electrofocusing in Natural pH gradients Formed by Buffers: Gradient Modification," Anal. Biochem. 78: 287-294.
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<u>/SV/</u>	O12	Palusinski et al., (Feb 1986), "Theory of Electrophoretic Separations: II. Construction of a Numerical Simulation Scheme and Its Applications," AIChE J. 32(2): 215-223.
<u>/SV/</u>	O13	Qin et al., (1998), "Microfabrication, Microstructures and Microsystems," Micro. Tech. Chem. And Life Sci., 194: 1-20.
<u>/SV/</u>	O14	Raymond et al., (Aug 1996), "Continuous Separation of High Molecular Weight Compounds Using a Microliter Volume Free-Flow Electrophoresis Microstructure," Anal. Chem. 68(15): 2515-2522.
<u>/SV/</u>	O15**	Raymond, D E et al., "Continuous Sample Pretreatment Using Free-Flow Electrophoresis Device Integrated into a Silicon Chip." Analytical Chemistry, American Chemical Society. Columbus, US, Vol. 66, No.18, Sept. 1994: 2858-2865.
<u>/SV/</u>	O16	Righetti, P. and Bossi, A., (1998), "Isoelectric focusing of proteins and peptides in gel slabs and in capillaries," Anal. Chim. Acta. 372: 1-19.
<u>/SV/</u>	O17	Rodriguez-Diaz et al., (1997) "Capillary isoelectric focusing," Electrophoresis 18: 2134-44.

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<u>*Examiner</u> <u>Initial</u>	<u>Document</u> <u>No.</u>	<u>Document Information</u>
<u>/SVI/</u>	O18	Rossier et al., (1999), "Microchannel networks for electrophoretic separations," Electrophoresis 20: 727-731.
<u>/SVI/</u>	O19	Saville, D. and Palusinski, O., (Feb 1986), "Theory of Electrophoretic Separations," AIChEJ. 32(2): 207-214.
<u>/SVI/</u>	O20	Schure et al., (June 1986), "Theory of Sedimentation Hyperlayer Field-Flow Fractionation," J. Anal. Chem., 58(7): 1509-1516.
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<u>/SVI/</u>	O22	Svensson, H., (1961), "Isoelectric Fractionation, Analysis and Characterization Ampholytes in Natural pH Gradients. I. The Differential Equation of Solute Concentrations at a Steady State and its Solution for Simple Cases," Acta Chem. Scand. 15(2): 325-341.
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<u>/SVI/</u>	O24	Tri et al., (Apr 2000), "Development of Electrical Field-Flow Fractionation;," Anal. Chem. 72(8): 1823-1829.
<u>/SVI/</u>	O25	Weigl et al., (1999), "Whole Blood Diagnostics in Standard Gravity and Microgravity by Use of Microfluidic Structures (T-Sensors)," Mikrochim Acta 131: 75-83.
<u>/SVI/</u>	O26	Weigl, B and Yager P., (Jan 1999), "Microfluidic Diffusion-Based Separation and Detection," Sci. 283: 346-47.

/Surekha Vathyam/

06/02/2007

Examiner's Signature

Date

\*Examiner: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*\*Documents cited herein marked with an "\*\*\*" have not previously been cited in a priority application relied upon herein for an earlier filing date. Copies of any so-noted Foreign Patent Documents and Other Information are enclosed for the Examiner's use.

MCK:cai  
12/2/2005



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**U.S. PATENT DOCUMENTS**

*Examiner Initial	ID	Document No.	Date	Inventor Name(s)	Class	Sub- Class
/SV/	US1	6,136,272	10/24/00	Weigl et al.	422	82.05
	US2	6,067,157	05/23/00	Altendorf	356	337
	US3	6,007,775	12/28/99	Yager	422	57
	US4	5,974,867	11/02/99	Forster	73	61.41
	US5	5,972,710	10/26/99	Weigl et al.	436	34
	US6	5,971,158	10/26/99	Yager et al.	209	155
	US7	5,948,684	09/07/99	Weigl et al.	436	52
	US8	5,932,100	08/03/99	Yager et al.	210	634
	US9	5,922,210	07/13/99	Brody et al.	210	767
	US10	5,748,827	05/05/98	Holl et al.	385	134
	US11	5,747,349	05/05/98	Van den Engh et al.	436	172
	US12	5,726,751	03/10/98	Altendorf et al.	356	246
	US13	5,726,404	03/10/98	Brody	200	81R
	US14	5,716,852	02/10/98	Yager et al.	436	172
	US15	5,630,924	05/20/97	Fuchs et al.	204	601
	US16	4,737,268	04/12/98	Giddings	209	12
	US17	5,800,690	09/1998	Chow et al.	204	451
	US18	5,750,015	05/1998	Soane et al.	204	454
	US19	5,837,115	11/1998	Austin et al.	204	450
	US20	6,221,654	04/2001	Quake et al.	435	287.3
	US21	6,387,707	05/2002	Seul et al.	436	164
	US22	6,294,063	09/2001	Becker et al.	204	450
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<u>/SV/</u>	US25	6,277,258	08/2001	Ivory et al.	204	450
<u>/SV/</u>	US26	5,993,632	10/2000	Frazier	204	450
<u>/SV/</u>	US27	5,993,632	11/1999	Becker et al.	204	547

## FOREIGN PATENT DOCUMENTS

<u>*Examiner Initial</u>	<u>ID</u>	<u>Document No.</u>	<u>Publication Date</u>	<u>Country</u>	<u>Class</u>	<u>Sub-Class</u>	<u>Translation?</u>
<u>/SV/</u>	F1	WO99/60397	10/25/99	PCT	G01N33/483		
<u>/SV/</u>	F2	WO99/17119	04/08/99	PCT	G01N33/543		
<u>/SV/</u>	F3	WO98/43066	10/01/98	PCT	G01N15/14		
<u>/SV/</u>	F4	<del>WO99/19717</del>	<del>4/22/99</del>	<del>PCT</del>	<del>G01N27/26</del>		
<u>/SV/</u>	F5	<del>WO94/11728</del>	<del>5/26/94</del>	<del>PCT</del>	<del>G01N</del>		
<u>/SV/</u>	F6	<del>WO95/17950</del>	<del>7/6/95</del>	<del>PCT</del>	<del>B01D</del>		

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## OTHER INFORMATION

<u>*Examiner Initial</u>	<u>Document No.</u>	<u>Document Information</u>
<u>/SV/</u>	O1	Baygents et al., (1997), "Recycling electrophoretic separations: modeling of isotachnophoresis and isoelectric focusing," J. Chromatog. A 779: 165-183.
<u>/SV/</u>	O2	Bier et al., (Mar 1983), "Electrophoresis: Mathematical Modeling and Computer Simulation," Science 219(4590): 1281-87.
<u>/SV/</u>	O3	Brody et al., (Dec 1996), "Biotechnology at Low Reynolds Numbers," Biophys. J. 71: 3430-3441.
<u>/SV/</u>	O4	Brody, J. and Yager, P., (1997), "Diffusion-based extraction in a microfabricated device," Sensors and Actuators A (Physical) 58: 13-18.
<u>/SV/</u>	O5	Caldwell et al., (Apr 1972), "Electrical Field-Flow Fractionation of Proteins," J. Sci. 176: 296-98.
<u>/SV/</u>	O6	Chmelik, J., (1991), "Isoelectric focusing field-flow fractionation: Experimental study of the generation of pH gradient," J. Chromatog. 539: 111-121.
<u>/SV/</u>	O7	Chmelick, J., (June 1991), "Isoelectric focusing field-flow fractionation. II. Experimental study of focusing of methyl red in the trapezoidal cross-section channel," J. Chromatog. 545(2): 349-58.
<u>/SV/</u>	O8	Chmelik, J. and Thormann, W., (1992), "Isoelectric focusing field-flow fractionation: III. Investigation of the influence of different experimental parameters on focusing of cytochrome c in the trapezoidal cross-section channel," J. Chromat. 600: 297-304

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<u>*Examiner Initial</u>	<u>Document No.</u>	<u>Document Information</u>
<u>/SV/</u>	O9	Chmelik, J. and Thormann, W., (1992), "Isoelectric focusing field-flow fractionation: IV. Investigations on protein separations in the trapezoidal cross-section channel," J. Chromat. 600: 305-311.
<u>/SV/</u>	O10	Corstiens et al., (1996), "Variation of the pH of the background electrolyte due to electrode reactions in capillary electrophoresis: Theoretical approach and in situ measurement," Electrophoresis 17: 137-43.
<u>/SV/</u>	O11	Effenhauser et al., (Sept 1997), "Integrated Capillary Electrophoresis on flexible Silicone Microdevices: Analysis of DNA Restriction Fragments and Detection of Single DNA Molecules on Microchips," Anal. Chem. 69(17): 3451-3457.
<u>/SV/</u>	O12	Evans, L. and Burns, M., (Jan 1995), "Solute Focusing Techniques for Bioseparations," Bio/Techn. 13: 46-62.
<u>/SV/</u>	O13	Fintschenko, Y. and Van den Berg, A., (1998), "Silicon microtechnology and microstructures in separation science," J. Chrom. A 819: 3-12.
<u>/SV/</u>	O14	Fuh, C. and Giddings, J., (1997), "Isoelectric Split-Flow Thin (Splitt) Fractionation of Proteins," Sep. Sci. Tech. 32(18): 2945-2967.
<u>/SV/</u>	O15	<del>Raymond, D E et al, "Continuous Sample Pretreatment Using Free-Flow Electrophoresis Device Integrated onto a Silicon Chip." Analytical Chemistry, American Chemical Society, Columbus, US, Vol. 66, No. 18, Sept. 1994: 2858-2865.</del>
<u>/SV/</u>	O16	Hofman. "Adaption of Capillary Isoelectric Focusing to Microchannels on a Glass Chip." Analytical Chemistry, American Chemical Society. Columbus, US, Vol. 71, 1999: 678-686.

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11/21/05